

A healthful plant-based diet is associated with lower type 2 diabetes risk via improved metabolic state and organ function: A prospective cohort study

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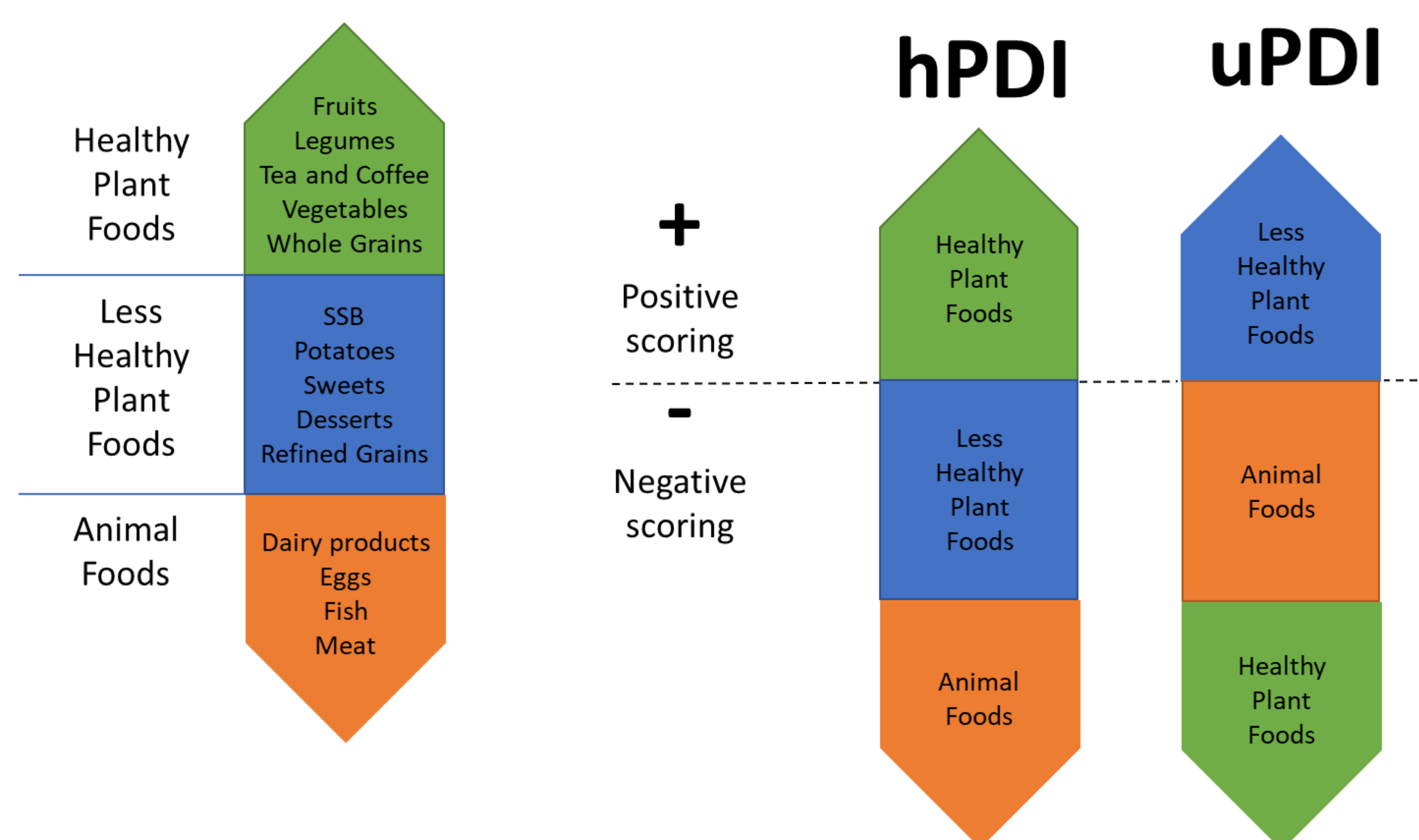
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Background

- In 2021, the global prevalence of diabetes was 6.1 % with a projection to increase to over 10 % by 2050, [1]. At least 75 % of all type two diabetes mellitus (T2DM) cases could be preventable by a healthy lifestyle [2]. A high consumption of fruits, vegetables, whole grains, dairy, and coffee have been associated with lower T2DM risk and a high intake of sugar sweetened beverages (SSB) and red and processed meat have been associated with increased T2DM risk [3]. Furthermore, vegan and vegetarian dietary patterns were associated with lower T2DM risk and better diabetes control [4,5].
- Operationalizations of plant-based diets merely based on the exclusion of animal foods do not offer insights into the quality of the consumed plant-based foods. Therefore, the healthful and unhealthful Plant-Based Diet Indices (hPDI and uPDI) were analyzed in relation to T2DM risk within this study.

Plant based indices



Methods

Prospective data from the UK Biobank, a cohort study of participants aged 40 to 69 years at baseline, was evaluated. Associations between healthful and unhealthful plant-based indices (hPDI and uPDI) and T2DM risk were analysed by multivariable Cox regression models, followed by causal mediation analyses to investigate which cardiometabolic risk factors explained the observed associations.

Results

Figure 1 Hazard ratios (95% CI) for T2DM across sex-specific quartiles (Q) for hPDI and uPDI

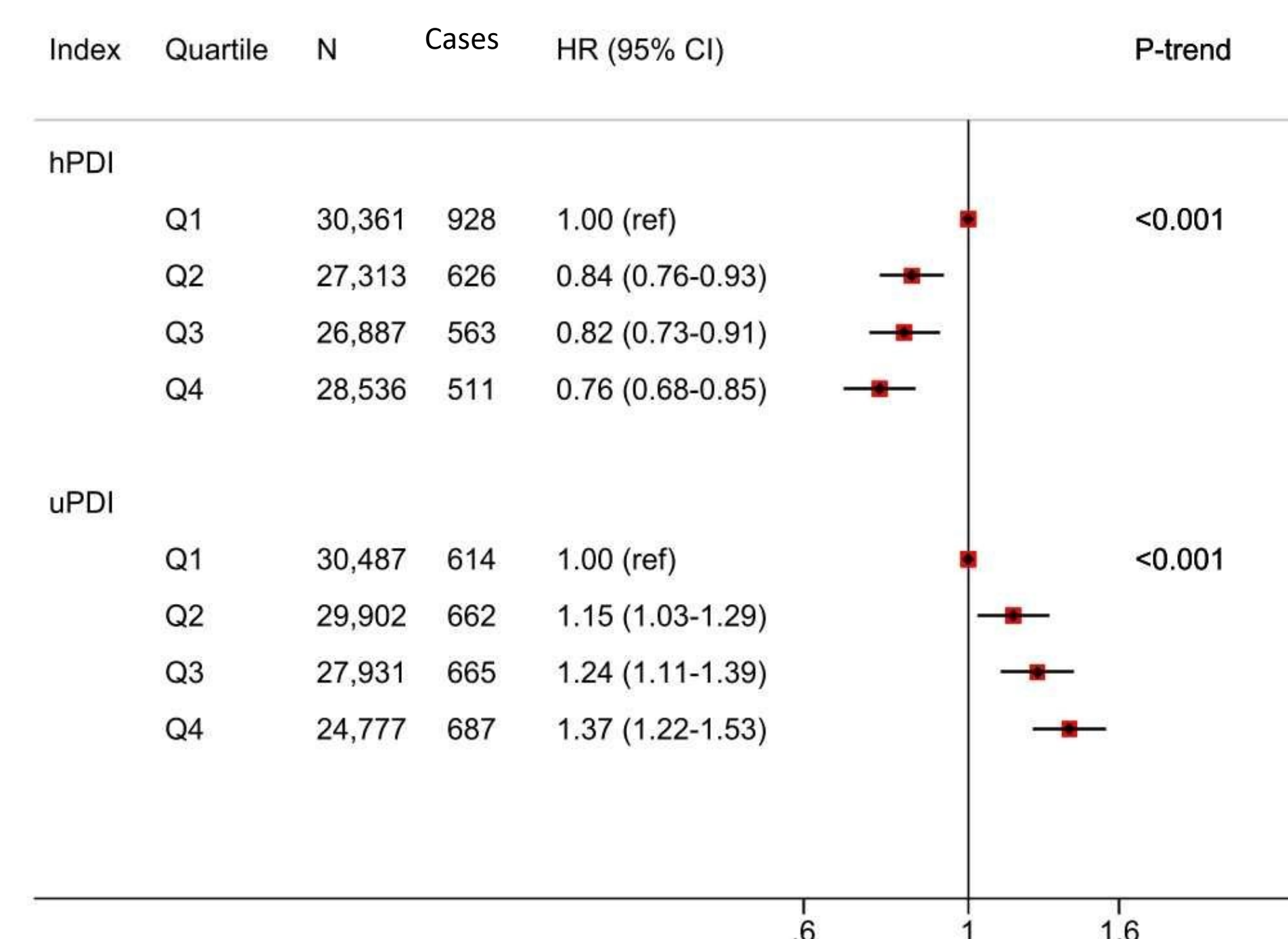
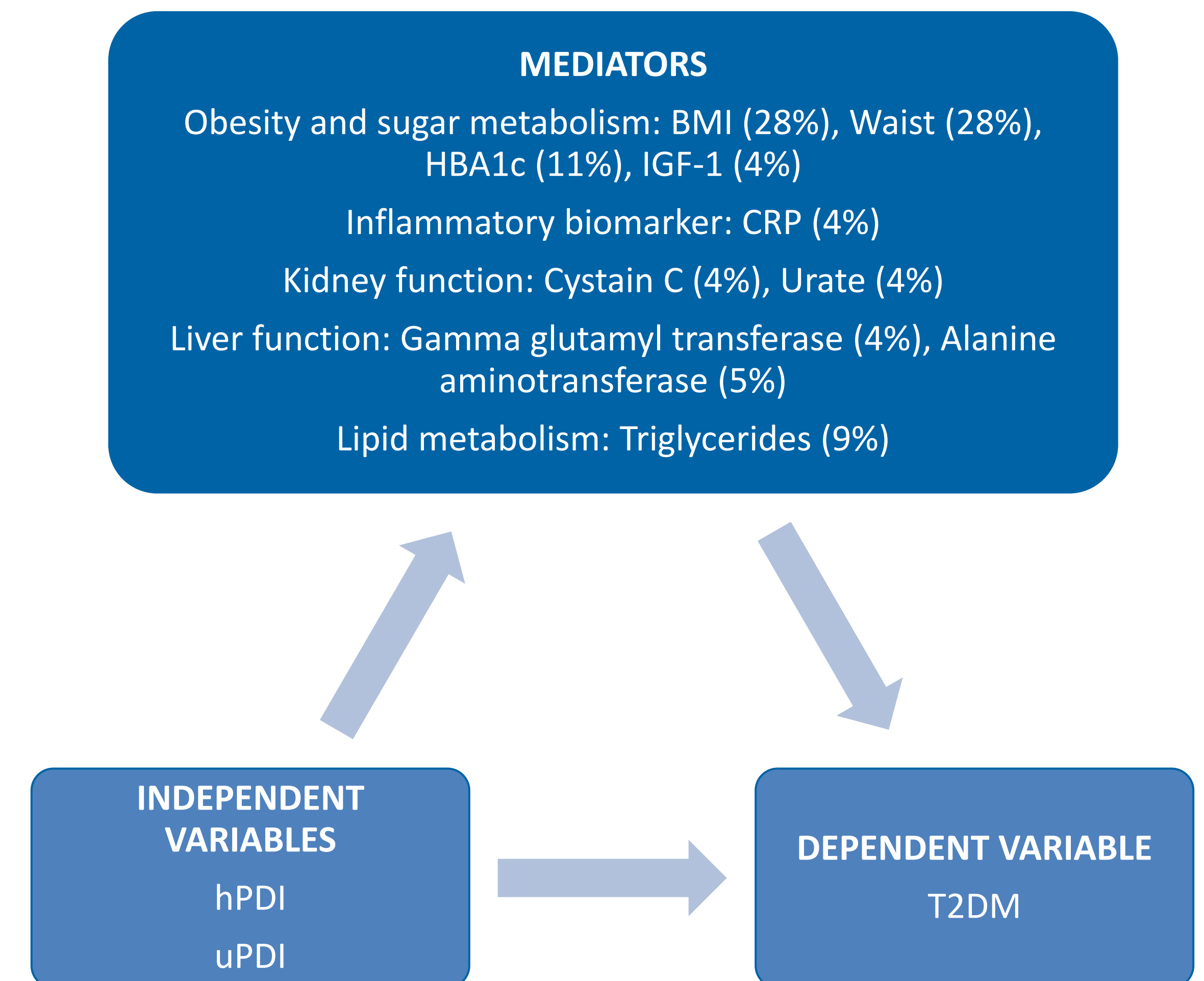


Figure 2 Mediation analysis between healthful plant-based diet score and type 2 diabetes



Conclusion

This study suggests that a healthy plant-based diet is associated with a lower T2DM risk due to several mechanisms beyond beneficial effects on body fatness and blood glucose including improved renal and liver function, and lower basal inflammation. Given the well-documented co-benefits of healthful plant-based diets on planetary health, our data support the shift towards healthful plant-based diets to address the syndemic of climate change, undernutrition and obesity [6].

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